NOVEMBER/DECEMBER 2024

GOAM15B/DOAM15B — BASICS OF MICROBIOLOGY

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is microbiology?
2. Define spontaneous generation.
3. List three common shapes of bacteria.
4. What is a metachromatic granule?
5. What are the general characteristics of fungi?
6. What is a Harmful Algal Bloom (HAB)?
7. What are the general characteristics of protozoa?
8. Name the main types of protozoan locomotion.
9. Give an example of a plant virus.
10. What is a bacteriophage?

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Outline the five major groups of microorganisms, including their key characteristics and examples.

Or

(b) Describe the contributions of Louis Pasteur.

12. (a) Outline the steps involved in Gram's staining and its importance in microbiology.

Or

(b) Illustrate light microscope.

13. (a) Outline the classification of algae, including major divisions and characteristics.

Or

(b) Examine the ecological roles of fungi.

14. (a) Outline the classification of protozoa, including major groups and their defining characteristics.

Or

(b) Discuss the various modes of reproduction in protozoa, including both asexual and sexual methods.

15. (a) Outline the classification of viruses, including major groups and their defining characteristics.

Or

(b) Examine the impact of viral diseases on human health, prevention and treatment.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Analyze the historical development of microbiology from the time of spontaneous generation.

17. Compare and contrast the principles of Scanning electron microscope.

18. Explain the impact of fungal diseases on agriculture and human health.

19. Provide a detailed overview of the life cycle of Plasmodium, including its phases in both the mosquito vector and the human host.

20. Analyze the life cycle of a typical bacteriophage, detailing the lytic and lysogenic cycles.

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